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BENEDICT COLLEGE
FINAL TECHNICAL REPORT

For

The Department Of Defense Infrastructure Grant

Grant Number: F4 9620-97-1-0335

Program Title: Acquisition of Instrumentation for the Enhancement of Undergraduate Education in the Physical Sciences

Principal Investigator: Dr. Christopher I. Chalokwu

A Department of Defense (DOD) Infrastructure grant was awarded to Benedict College in 1997. The primary purpose of the award was to enhance undergraduate education in the physical sciences through acquisition of state-of-the-art instrumentations. As part of the project, the College sought to broaden approaches to collaborative research by faculty and students. To support the science program, Benedict College purchased one each of the following equipment:

- Bruckner Nuclear Magnetic Resonance
- Gas Chromatograph and Mass Spectrometer
- Resonant Ultrasound Spectrometer
- FT-Infrared Spectrometer
- Perkin Elmer Atomic Absorption Spectrometer
- Computer and
- HP LaserJet Printer.

All instruments have been installed, tested, and are operational. The Nuclear Magnetic Resonance (NMR) is housed in a redesigned and renovated dedicated laboratory space. The Atomic Absorption Spectrometer is utilized as a teaching instrument and through its utilization, helps in collaborative research by Benedict and school-based faculty members. The Gas Chromatograph and Mass Spectrometer is utilized primarily by laboratory students in helping them to reach higher levels of reading and analyzing spectra from the machine.

The acquisition of these instruments have strengthened Benedict College's programs in chemistry and environmental health science while simultaneously enhancing the preparation process for accreditation by the American Chemical Society and the National Environmental Health Association. In addition, Benedict College, through the use of institutional funds, has fulfilled its commitment to the DOD by hiring a Laboratory Manager, Dr. Neyoka Fisher, to manage the laboratories and instruments.

Benedict College also provided funds for the Chemistry, Environmental Health Science faculty members, and the Laboratory Manager to attend special seminars and training workshops on how to test and operate the various instrumentations. The faculty members and the Laboratory Manager are continuing to seek out additional training opportunities pertaining to the advanced techniques of the instrumentations. Additionally, the College has obtained maintenance contracts to ensure service for the operation of the instruments.

Benedict College is pleased to have been awarded the DOD grant for science laboratory equipment. These instrumentations have enabled students to have access to the various calibrations in their experiments. Students are able to test and analyze molecules, thereby enhancing their knowledge and comfort levels of utilizing the instruments.